

RLB
KC# 16,648A

KCC 4769
PATENT

WHAT IS CLAIMED IS:

5 1. An elastic composite comprising a substrate and an elastic member secured to the substrate along a securement path extending longitudinally along the substrate, the position of said elastic member on the substrate varying transversely within the securement path in a generally periodic wave pattern having at least one period within said securement path, said periodic wave pattern being shaped such that the elastic composite is more stretchable in the direction of the securement path than transverse to the securement path.

Sub a1
B1 2. An elastic composite as set forth in claim 1 wherein the periodic wave pattern of the elastic member is shaped such that the elastic member has a slope of between about -1 and 1 relative to the direction of the securement path.

Sub a2
P1 3. An elastic composite as set forth in claim 2 wherein the periodic wave pattern is generally sinusoidal.

5 4. An elastic composite as set forth in claim 1 wherein the elastic member is a first elastic member, said composite further comprising a second elastic member secured to the substrate, said first and second elastic members together defining said securement path, the position of said second elastic member varying transversely within the securement path in a generally periodic wave pattern having at least one period within said securement path.

Sub a3
P1 5. An elastic composite as set forth in claim 4 wherein said first and second elastic members are coextensive along the securement path.

Sub a4
B1 6. An elastic composite as set forth in claim 4 wherein said first and second elastic members are secured to the substrate in generally parallel,

10029375-122001

RLB
KC# 16,648A

KCC 4769
PATENT

sub a1
cont
H
spaced relationship with each other along at least a portion of the securement path.

sub a5
bl
7. An elastic composite as set forth in claim 4 wherein said first and second elastic members are secured to the substrate in generally transversely spaced relationship with each other along at least a portion of the securement path, the transverse spacing between said first and second elastic members varying along said portion of the securement path.

sub a6
bl
8. An elastic composite as set forth in claim 4 wherein said first and second elastic members cross each other at least once within the securement path.

sub a7
bl
9. An elastic composite as set forth in claim 4 wherein the periodic wave pattern of the second elastic member is substantially the same as the periodic wave pattern of the first elastic member.

sub a8
bl
10. An elastic composite as set forth in claim 4 wherein the periodic wave pattern of the second elastic member is substantially the negative of the periodic wave pattern of the first elastic member.

sub a9
bl
11. An elastic composite as set forth in claim 10 wherein the first and second elastic members cross each other at least once within the securement path.

12. An elastic composite comprising a substrate and an elastic member secured to the substrate along a securement path extending longitudinally along the substrate, the securement path varying laterally relative to the substrate as it extends longitudinally along the substrate, the

10029375-12001

5

*Pl
ant d*

position of the elastic member varying transversely within the securement path to at least partially define a width of the securement path.

13. An elastic composite as set forth in claim 12 wherein the elastic member is secured to the substrate in a generally periodic wave pattern having at least one period within the securement path.

14. An elastic composite as set forth in claim 13 wherein the periodic wave pattern of the elastic member is shaped such that the elastic member has a slope of between about -1 and 1 relative to the direction of the securement path.

15. An elastic composite as set forth in claim 13 wherein the periodic wave pattern of the elastic member is generally sinusoidal.

16. An elastic composite as set forth in claim 12 wherein the elastic member is a first elastic member, said composite further comprising a second elastic member secured to the substrate, said first and second elastic members together at least partially defining said securement path width, the position of the second elastic member varying transversely within the securement path.

17. An elastic composite as set forth in claim 16 wherein said first and second elastic members are coextensive along the securement path.

18. An elastic composite as set forth in claim 16 wherein said first and second elastic members are secured to the substrate in generally parallel, spaced relationship with each other along at least a portion of the securement path.

100935-10001
FOOZET-5462001

5

19. An elastic composite as set forth in claim 16 wherein said first and second elastic members are secured to the substrate in generally transversely spaced relationship with each other along at least a portion of the securement path, the transverse spacing between said first and second elastic members varying along said portion of the securement path.

20. An elastic composite as set forth in claim 16 wherein said first and second elastic members cross each other at least once within the securement path.

21. An elastic composite as set forth in claim 16 wherein the periodic wave pattern of the second elastic member is substantially the same as the periodic wave pattern of the first elastic member.

22. An elastic composite as set forth in claim 16 wherein the periodic wave pattern of the second elastic member is substantially the negative of the periodic wave pattern of the first elastic member.

23. A elastic composite as set forth in claim 22 wherein the first and second elastic members cross each other at least once within the securement path.

24. An elastic composite comprising a substrate and an elastic member secured to the substrate along a crooked securement path, the position of the elastic member varying transversely within the securement path to at least partially define a width of the securement path.

25. An elastic composite as set forth in claim 24 wherein the securement path defines a periodic pattern, at least one period of which is formed on the substrate, the position of the elastic member varying

RLB
KC# 16,648A

KCC 4769
PATENT

B
Cont'd
transversely within the securement path in a generally periodic pattern having at least two periods within each period of the pattern defined by the securement path.

26. An elastic composite as set forth in claim 24 wherein the securement path is arcuate.

27. An elastic composite as set forth in claim 25 wherein the elastic member is secured to the substrate along the securement path such that the composite is more stretchable in the direction of the securement path than transverse to the securement path.

28. A disposable absorbent article comprising a liner adapted for contiguous relation with the wearer's skin, an outer cover, an absorbent body between the liner and the outer cover for absorbing liquid body waste, and at least one elastic member secured within the article along a generally crooked securement path, the position of said at least one elastic member varying transversely within the securement path to at least partially define a width of said securement path.

B
29. A disposable absorbent article as set forth in claim 28 wherein said article has a longitudinal axis, longitudinally opposite ends and laterally opposite side edges, said securement path being a first securement path extending longitudinally intermediate said longitudinal ends generally adjacent one of said side edges and being generally crooked relative to the longitudinal axis of the article, said article further comprising at least one other elastic member secured within the article along a second securement path extending longitudinally intermediate said longitudinal ends generally adjacent the opposite one of said side edges, said second securement path being generally crooked relative to the longitudinal axis of said article, the

10029375-122001

position of the at least one other elastic member varying transversely within the second securement path.

30. A disposable absorbent article as set forth in claim 29 wherein at least a portion of each of side edge of the article is oblique relative to the longitudinal axis of the article to define a contour of each side edge, said first and second securement paths having shapes corresponding to the contours of the respective side edges of the article.

31. A disposable absorbent article as set forth in claim 30 wherein said article is a child's toilet training pants comprising an anterior region, a posterior region and a crotch region disposed longitudinally therebetween, said anterior region, posterior region and crotch region being integrally formed and configured to have a central waist opening generally defined by said longitudinal ends and a pair of leg openings defined by said laterally opposite side edges.

32. A disposable absorbent article as set forth in claim 28 wherein the securement path has a length, the position of said at least one elastic member varying transversely within the securement path in a generally periodic wave pattern having at least one period within said securement path, said periodic wave pattern being shaped such that said article is more stretchable generally in the direction of the securement path than transverse to the securement path.

33. A disposable absorbent article as set forth in claim 28 wherein the securement path has a length, the position of said at least one elastic member varying transversely within the securement path in a generally periodic wave pattern, said periodic wave pattern having at least two periods within the length of the securement path.

5 34. A disposable absorbent article comprising a liner adapted for contiguous relation with the wearer's skin, an outer cover, an absorbent body between the liner and the outer cover for absorbing liquid body waste, and at least one elastic member secured within the article along a securement path, the position of said at least one elastic member varying transversely within the securement path in a generally periodic wave pattern having at least one period within said securement path, said periodic wave pattern being shaped such that said article is more stretchable in the direction of the securement path than transverse to the securement path.

35. A disposable absorbent article as set forth in claim 34 wherein the securement path has a length, and the periodic wave pattern of the at least one elastic member has at least two periods within the length of the securement path.

36. A method of forming an elastic composite comprising the steps of:
moving a substrate in a flow direction thereof;
guiding an elongate elastic member onto the substrate and securing the elastic member to the substrate along a securement path, said guiding step comprising varying the lateral position of the elastic member relative to the flow direction of the substrate to vary the position of the elastic member transversely within the securement path in a generally periodic wave pattern wherein the periodic wave pattern is shaped such that the formed elastic composite is more stretchable in the direction of the securement path than transverse to the securement path.

37. A method as set forth in claim 36 wherein said guiding step further comprises controlling at least one of a speed at which the substrate moves in the flow direction, and the lateral position of the elastic member relative to the

10029375-122001

36-41

156/141
164

15

flow direction of the substrate, such that the periodic wave pattern is shaped such that the formed elastic composite is more stretchable in the direction of the securement path than transverse to the securement path.

38. A method as set forth in claim 37 wherein at least one of the speed at which the substrate moves in the flow direction, and the lateral positioning of the elastic member relative to the flow direction of the substrate, is controlled such that the elastic member has a slope of between about -1 and about 1 relative to the flow direction of the securement path.

39. A method as set forth in claim 36 further comprising passing the substrate through a roller nip after the elastic member is guided onto the substrate to further adhere the elastic member to the substrate.

40. A method of forming an elastic composite, the method comprising the steps of:

moving a substrate in a flow direction thereof;

guiding an elongate elastic member onto the substrate along a securement path, at least a portion of the securement path being oblique relative to the flow direction of the substrate, said guiding step comprising varying the lateral position of the elastic member relative to the flow direction of the substrate to vary the position of the elastic member transversely within the securement path; and

securing the elastic member to the substrate.

41. A method as set forth in claim 40 wherein said varying step comprises varying the lateral position of the elastic member relative to the flow direction of the substrate in a generally periodic wave pattern.

10029375-12001

5

10

RLB
KC# 16,648A

KCC 4769
PATENT

5 42. An elastic composite comprising a substrate and a pair of elastic members secured to the substrate in generally transversely spaced relationship with each other along a crooked securement path, the transverse spacing between the elastic members defining a width of the securement path, said securement path width varying along its length.

add a9

10029375-122001